

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
22 March 2001 (22.03.2001)

PCT

(10) International Publication Number
WO 01/20542 A3

(51) International Patent Classification⁷: G06K 19/07, 17/00

(74) Agents: BERLINER, Brian, M.; O'Melveny & Myers LLP, 400 South Hope Street, Los Angeles, CA 90071-2899 et al. (US).

(21) International Application Number: PCT/US00/25280

(22) International Filing Date: 12 September 2000 (12.09.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 09/394,241 13 September 1999 (13.09.1999) US

(71) Applicant: INTERMEC IP CORP. [US/US]; 21900 Burbank Boulevard, Woodland Hills, CA 91367-7418 (US).

(72) Inventors: ANDERSON, James, A.; 11311 - 19th Avenue S.E. #B208, Everett, WA 98208 (US). WIKLOF, Christopher, A.; 3531 - 99th Street S.E., Everett, WA 98208 (US).

(81) Designated State (national): JP.

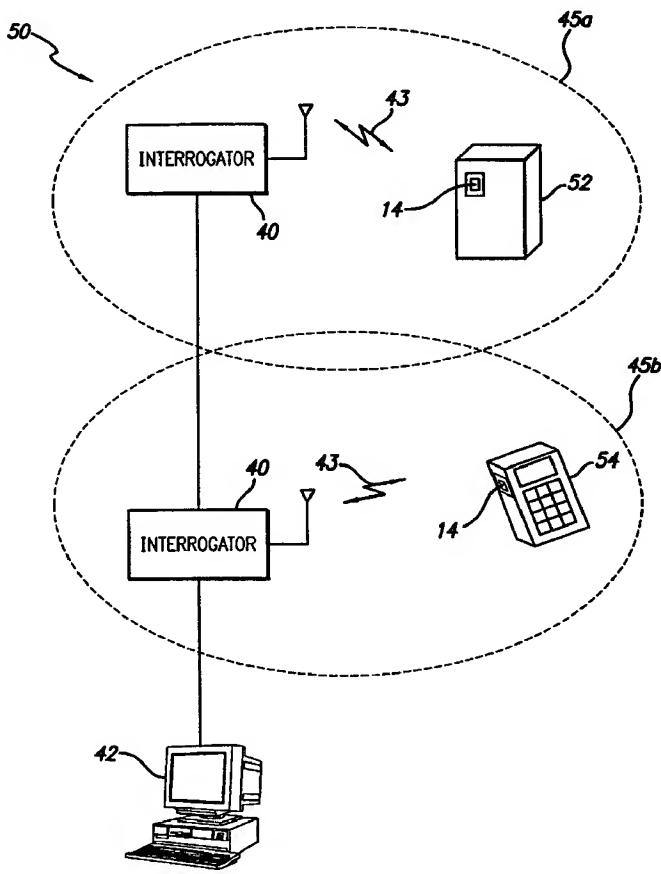
(84) Designated States (regional): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published:
— with international search report

(88) Date of publication of the international search report: 22 November 2001

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: LOW-COST RADIO REPLACEMENT UTILIZING RFID TECHNOLOGY



(57) Abstract: A radio replacement using RFID technology in an RF-enabled device is provided. The RF-enabled handheld, portable, or otherwise mobile device (54) is equipped with an RFID tag (14) having read and write capability. Data exchange occurs between the RFID tag and a network of RFID interrogators (40) placed to provide adequate coverage of the area over which the device might move. As a result of replacing a full functioning transmitting/receiving radio with an RFID tag, the cost of the RF-enabled device could be significantly reduced, its battery life could be extended, and it could operate in a frequency band that does not require FCC approval. Additionally, this invention could provide tracking and access control using the RFID tag and interrogators.

WO 01/20542 A3

INTERNATIONAL SEARCH REPORT

Internat	Application No
PCT/US 00/25280	

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 G06K19/07 G06K17/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 G06K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 785 527 A (MOTOROLA INC) 23 July 1997 (1997-07-23)	1-3,5, 11,13
Y	column 1, line 17 -column 2, line 26; figure 1 ---	4,6,7, 12,14
Y	EP 0 405 074 A (SYMBOL TECHNOLOGIES INC) 2 January 1991 (1991-01-02) column 2, line 51 -column 3, line 18 ---	6,7,12
Y	WO 90 05960 A (CRYPTAG LIMITED ; DEMIC SCIENT LIMITED (GB)) 31 May 1990 (1990-05-31) page 1, paragraph 2 -page 2, paragraph 3 -----	4,14

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

5 January 2001

Date of mailing of the international search report

21.06.2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Schauler, M

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 00/25280

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-15

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-15

A wireless data communication system comprising a host computer with a RFID interrogator and a wireless device, including an input device, memory and a RFID tag adapted to transmit data to the host computer.

2. Claims: 16-20

A method of tracking the location of a wireless device, said device being movable within any one of a plurality of cells.

INTERNATIONAL SEARCH REPORT

...ormation on patent family members

Intern...ional Application No

PCT/US 00/25280

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
EP 0785527	A	23-07-1997	US	5777903 A		07-07-1998
EP 0405074	A	02-01-1991	US	5029183 A		02-07-1991
			AU	627333 B		20-08-1992
			AU	5808090 A		03-01-1991
			CA	1310370 A		17-11-1992
			DE	69030936 D		24-07-1997
			DE	69030936 T		29-01-1998
			EP	0770962 A		02-05-1997
			JP	2506481 B		12-06-1996
			JP	3038133 A		19-02-1991
			US	5528621 A		18-06-1996
			US	5479441 A		26-12-1995
			US	5668803 A		16-09-1997
			US	5815811 A		29-09-1998
			US	5157687 A		20-10-1992
			US	5103461 A		07-04-1992
			US	5142550 A		25-08-1992
			US	6002918 A		14-12-1999
			US	5280498 A		18-01-1994
WO 9005960	A	31-05-1990		NONE		